

## CLAIMS

1. A method for the decontamination of oily cuttings,  
coming from the drilling of oil wells, and the contem-  
poraneous recovery of the oily component, comprising  
5 the following steps:
  - a. mixing of said cuttings with CO<sub>2</sub> in the liquid state  
at a pressure value ranging from 45 to 80 bar and a  
temperature corresponding to the saturation value,  
with dissolution of the oily fraction of the cut-  
10 ting;
  - b. removal of the liquid phase (solution) from the  
solid phase (cutting);
  - c. expansion and heating of the solution leaving step  
(b), with the recovery of the oily fraction dis-  
15 charged, and CO<sub>2</sub> in vapour phase;
  - d. cooling and condensation of the process CO<sub>2</sub> and its  
recycling to step (a), after possible under-  
cooling.
2. The method according to claim 1, wherein the mixing of  
20 the cuttings takes place at a pressure ranging from 45  
to 70 bar, whereas the separation of the oily fraction  
is effected at a pressure ranging from 30 to 60 bar.
3. The method according to claims 1 and 2, wherein the  
mixing step of the cuttings and the separation step of  
25 the oily fraction take place at a temperature close to

the saturation value of the liquid phase.

4. The method according to any of the claims from 1 to 3, wherein the under-cooling degree of the liquid CO<sub>2</sub> ranges from 0 to 5°C.
- 5 5. The method according to any of the claims from 1 to 4, wherein the liquid CO<sub>2</sub> is fed to the extraction vessel in a ratio from 2 to 20 times by weight with respect to the cuttings.
6. The method according to any of the claims from 1 to 5,  
10 wherein the moving of the liquid CO<sub>2</sub> is effected using a volumetric pump situated between the accumulation tank and the extractor.
7. The method according to any of the previous claims, wherein the oily phase extracted is separated by the  
15 use of one or more separators on line.
8. The method according to claim 7, wherein the separation section consists of a single separator with a cyclone effect.
9. The method according to claim 7, wherein the separation  
20 section consists of two separators, the first with inertial impact, the second with a cyclone effect.
10. The method according to claims 7-9, wherein a filter for separating the entrained liquid, is situated down-  
25 stream of the separation section.